IN THE CLAIMS:

1. (Original) A method for associating reliable datagram queue pairs with an underlying end-to-end context of a channel adapter, comprising:

storing a reliable datagram domain within the reliable datagram queue pair context;

storing the same reliable datagram domain within the end-to-end context; and

storing a partition key within the end-to-end context.

2. (Original) The method according to claim 1, wherein a consumer process cannot directly access the reliable datagram domain.

3. (Original) The method according to claim 1, in the case of incoming messages, further comprising:

comparing the partition key of an incoming data packet with the partition key of the end-to-end context;

if the partition keys match, comparing the reliable datagram domain of the queue pair with the reliable datagram domain of the end-to-end context; and

if the reliable datagram domains match, processing the packet normally.

4. (Original) The method according to claim 3, wherein the step of comparing the partition keys of the packet and end-to-end context further comprises processing the packet according to InfiniBand partitioning semantics, if the partition keys do not match.

5. (Original) The method according to claim 3, wherein the step of comparing the reliable datagram domains of the queue pair and end-to-end context further comprises:

giving a negative acknowledgment to the data packet, if the reliable datagram domains do not match; and

placing the send queue in an error state.

6. (Original) The method according to claim 1, in the case of outgoing messages, further comprising:

comparing the reliable datagram domain of the queue pair with the reliable datagram domain of the end-to-end context; and

if the reliable datagram domains match, inserting the partitioning key of the end-to-end context into the transport header of the data packet.

7. (Original) The method according to claim 6, further comprising: completing the packet in error, if the reliable datagram domains do not match; and

placing the send queue in an error state.

8. (Original) The method according to claim 1, further comprising storing reliable datagram domain numbers for:

kernel code; and

user code;

wherein the kernel reliable datagram domain can only be used by kernel code.

9. (Original) The method according to claim 1, further comprising storing reliable datagram domain numbers for:

kernel code; and

consumer processes;

wherein the kernel reliable datagram domain can only be used by kernel code.

10. (Original) A computer program product in a computer readable medium for use in a data processing system for associating reliable datagram queue pairs with an underlying end-to-end context of a channel adapter, the computer program product comprising:

instructions for storing a reliable datagram domain within the reliable datagram queue pair context;

instructions for storing the same reliable datagram domain within the end-to-end context; and

instructions for storing a partition key within the end-to-end context.

11. (Original) The computer program product according to claim 10, wherein a consumer process cannot directly access the reliable datagram domain.

12. (Original) The computer program product according to claim 10, in the case of incoming messages, further comprising:

instructions for comparing the partition key of an incoming data packet with the partition key of the end-to-end context;

if the partition keys match, instructions for comparing the reliable datagram domain of the queue pair with the reliable datagram domain of the end-to-end context; and

if the reliable datagram domains match, instructions for processing the packet normally.

13. (Original) The computer program product according to claim 12, wherein the instructions for comparing the partition keys of the packet and end-to-end context further comprise instructions for processing the packet according to InfiniBand partitioning semantics, if the partition keys do not match.

14. (Original) The computer program product according to claim 12, wherein the instructions for comparing the reliable datagram domains of the queue pair and end-to-end context further comprises:

instructions for giving a negative acknowledgment to the data packet, if the reliable datagram domains do not match; and

instructions for placing the send queue in an error state.

15. (Original) The computer program product according to claim 10, in the case of outgoing messages, further comprising:

instructions for comparing the reliable datagram domain of the queue pair with the reliable datagram domain of the end-to-end context; and

instructions for if the reliable datagram domains match, inserting the partitioning key of the end-to-end context into the transport header of the data packet.

16. (Original) The computer program product according to claim 15, further comprising:

instructions for completing the packet in error, if the reliable datagram domains do not match; and

instructions for placing the send queue in an error state.

17. (Original) The computer program product according to claim 10, further comprising instructions for storing reliable datagram domain numbers for:

kernel code; and

user code;

wherein the kernel reliable datagram domain can only be used by kernel code.

18. (Original) The computer program product according to claim 10, further comprising instructions for storing reliable datagram domain numbers for:

kernel code; and

consumer processes;

wherein the kernel reliable datagram domain can only be used by kernel code.

19. (Original) A system for associating reliable datagram queue pairs with an underlying end-to-end context of a channel adapter, comprising:

means for storing a reliable datagram domain within the reliable datagram queue pair context;

means for storing the same reliable datagram domain within the end-to-end context; and

means for storing a partition key within the end-to-end context.

20. (Original) The system according to claim 19, in the case of incoming messages, further comprising:

means for comparing the partition key of an incoming data packet with the partition key of the end-to-end context;

if the partition keys match, means for comparing the reliable datagram domain of the queue pair with the reliable datagram domain of the end-to-end context; and

if the reliable datagram domains match, means for processing the packet normally.

21. (Original) The system according to claim 19, in the case of outgoing messages, further comprising:

means for comparing the reliable datagram domain of the queue pair with the reliable datagram domain of the end-to-end context; and

if the reliable datagram domains match, means for inserting the partitioning key of the end-to-end context into the transport header of the data packet.